

AMENDMENTS TO THE CLAIMS

The listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims

23. (Currently Amended) A current/voltage converter arrangement comprising:

- first and second input terminals configured to receive a primary AC signal having an input frequency;
- an output region;
- a transformer device having a primary side and a secondary side, the primary side having a primary inductance and first and second primary terminals, the secondary side having a secondary inductance;
- a first switch device coupled between the first input terminal and the first primary terminal, the first switch device having an off condition and an on condition, the first switch configured to conduct current in a first direction in the on condition;
- a second switch device coupled between the second input terminal and second primary terminal, the second switch device having an off condition and an on condition, the second switch configured to conduct current in a second direction in the on condition;
- a first bypass coupled in parallel with the first switch device, and a second bypass coupled in parallel with the second switch device, the first bypass operable to conduct current when the first switch is in an off condition, the second bypass operable to conduct current when the second switch is in an off condition;

- wherein the first switch device, the primary inductance of the transformer device, and the second switch device are connected in a serial sequence, and wherein the first switch device and the second switch device are provided in antiserries with respect to one another.

24. (Original) The current/voltage converter arrangement as claimed in claim 23, wherein

- the first switch device is configured to switch to the on condition when the second switch device is in the off condition, the second switch device is configured to switch to the on condition when the first switch device is in the off condition, the first switch device having a switching frequency dependent upon an aspect of the primary AC signal.

25. (Original) The current/voltage converter arrangement as claimed in claim 23, wherein the first switch device comprises a bipolar transistor.

26. (Original) The current/voltage converter arrangement as claimed in claim 25, wherein the first bypass comprises a separate diode device.

27. (Original) The current/voltage converter arrangement as claimed in claim 23, wherein,
the first switch device comprises a MOSFET.

28. (Original) The current/voltage converter arrangement as claimed in claim 27, wherein

the first bypass comprises a parasitic diode device of the MOSFET.

29. (Original) The current/voltage converter arrangement as claimed in claim 23, wherein the first switch device is coupled directly to the first input terminal and the second switch device is coupled directly to the second input terminal.

30. (Original) The current/voltage converter arrangement as claimed in claim 23, wherein the first switch device and the second switch device cooperate to form a synchronous rectifier.

31. (Original) The current/voltage converter arrangement as claimed in claim 23, wherein the first bypass and the second bypass cooperate to form a primary-side rectifier device.

32. (Original) The current/voltage converter arrangement as claimed in claim 23, wherein the secondary inductance comprises multiple taps.

33. (Original) The current/voltage converter arrangement as claimed in claim 23, further comprising a secondary-side rectifier device operably coupled to secondary side of the transformer.

34. (Original) The current/voltage converter arrangement as claimed in claim 33, wherein the secondary-side rectifier device comprises a plurality of diode devices.

35. (Original) The current/voltage converter arrangement as claimed in claim 34, wherein the secondary-side rectifier device comprises a half-bridge rectifier with two diode devices.

36. (Original) The current/voltage converter arrangement as claimed in claim 34, wherein the secondary-side rectifier device comprises a full wave diode rectifier bridge.

37. (Currently Amended) The current/voltage converter arrangement as claimed in claim 34, wherein at least one of the plurality of diode devices of secondary-side ~~rectifier~~ rectifier device is formed as a MOSFET.

38. (Original) The current/voltage converter arrangement as claimed in claim 37, wherein the at least one MOSFET may be controlled such that the secondary-side rectifier device is operated in a synchronous rectifier mode.

39. (Original) A current/voltage converter arrangement comprising:

- first and second input terminals configured to receive a primary AC signal having an input frequency;
- an output;
- a transformer device having a primary side and a secondary side, the primary side having a primary inductance and first and second primary terminals, the secondary side having a secondary inductance;
- a first switch device coupled between the first input terminal and the first primary

- terminal, the first switch device having an off condition and an on condition, the first switch configured to conduct current in a first direction in the on condition;
- a second switch device coupled between the second input terminal and second primary terminal, the second switch device having an off condition and an on condition, the second switch configured to conduct current in a second direction in the on condition;
 - a first bypass coupled in parallel with the first switch device, and a second bypass coupled in parallel with the second switch device, the first bypass operable to conduct current when the first switch is in an off condition, the second bypass operable to conduct current when the second switch is in an off condition.
 - a third switch coupled between the secondary side of the transformer device and the output, the third switch operable to alternate between an on condition and an off condition synchronous to the on and off conditions of the first and second switch devices.
40. (Original) The current/voltage converter arrangement as claimed in claim 39, wherein
- the first switch device is configured to switch to the on condition when the second switch device is in the off condition, the second switch device is configured to switch to the on condition when the first switch device is in the off condition, the first switch device having a switching frequency dependent upon an aspect of the primary AC signal, the third switch device also having a switching frequency dependent upon the aspect of the primary AC signal.

41. (Original) The current/voltage converter arrangement as claimed in claim 39, further

comprising:

- a secondary-side rectifier device coupled between the secondary side of the transformer and the output; and
- at least one smoothing capacitor coupled between the secondary-side rectifier device and the output.

42. (Original) The current/voltage converter arrangement as claimed in claim 41, wherein the third switch device comprises at least a portion of the secondary-side rectifier device.

43. (Original) The current/voltage converter arrangement as claimed in claim 39, wherein the third switch device comprises a MOSFET.

44. (Original) The current/voltage converter arrangement as claimed in claim 40, wherein third switch device is inversely controlled with respect to the first switch device.